

THERE IS CLAIMED:

1. A resonant cavity device comprising a waveguide body having a lateral wall extending in a longitudinal direction, having a first coefficient of thermal expansion, and delimiting a resonant cavity in conjunction with opposite first and second end walls, wherein said first end wall has a second coefficient of thermal expansion lower than said first coefficient and has an internal face fastened to a first assembly comprising at least one main plate having a third coefficient of thermal expansion lower than said first coefficient and dimensions in a plane perpendicular to said longitudinal direction less than but substantially equal to those of said cavity, and an intermediate member having a fourth coefficient of thermal expansion lower than said third coefficient and having an end portion fixed to said main plate and adapted, in the event of a temperature variation, to convert a dimensional variation in a direction perpendicular to said longitudinal direction into a dimensional variation in said longitudinal direction inducing longitudinal translation of said main plate inside said cavity.
2. The device claimed in claim 1 further comprising at least one assembly also comprising a main plate fastened to an intermediate member and to said intermediate member of said first assembly.
3. The device claimed in claim 2 wherein said second assembly is substantially identical to said first assembly.
4. The device claimed in claim 1 wherein said first assembly comprises at least two intermediate members that are substantially identical and fastened together, the intermediate member farthest from said first end wall being fastened by its end portion to said main plate.
5. The device claimed in claim 4 wherein said intermediate members are fastened together in pairs by an exterior ring having said third coefficient of thermal expansion.
6. The device claimed in claim 1 wherein said first assembly is fastened to said first end wall by its intermediate member.
7. The device claimed in claim 1 further comprising an intermediate plate having said third coefficient of thermal expansion, having dimensions in a plane perpendicular to said longitudinal direction less than but substantially equal to those of said resonant cavity, and disposed between said first assembly, to which it is fastened, and said first end

wall, to which it is also fastened.

8. The device claimed in claim 7 wherein said intermediate plate is fastened to said first end wall by a calibration plate having said fourth coefficient of thermal expansion and dimensions in a plane perpendicular to said longitudinal direction less than but substantially equal to those of said resonant cavity and said lateral wall is fastened to said first end wall or said second end wall by at least one shim of selected thickness.
9. The device claimed in claim 1 wherein each intermediate member has a central portion extended by first and second peripheral rims inclined at selected angles on either side of a plane containing said central portion, thereby defining a peripheral groove.
10. The device claimed in claim 9 wherein said peripheral groove has a substantially V-shaped cross section.
11. The device claimed in claim 9 wherein each peripheral rim has an end portion fastened to said main plate, said intermediate plate or said first end wall, which it faces.
12. The device claimed in claim 11 wherein each main plate and/or each intermediate plate and/or said first end wall comprises at least one longitudinal peripheral abutment on which bears said end portion of said peripheral rim to which it is fastened.
13. The device claimed in claim 1 wherein said first and fourth coefficients of thermal expansion are equal.
14. The device claimed in claim 1 wherein said second and third coefficients of thermal expansion are equal.
15. The device claimed in claim 1 wherein said lateral wall and/or said second end wall and/or each intermediate member and/or each calibration plate is made of aluminum.
16. The device claimed in claim 1 wherein said intermediate plate and/or said first end wall and/or each shim and/or each main plate is made from an alloy of nickel and steel, in particular of Invar®.